

"As we started, the water was warm, the air was fragrant with piny smells, and the voice of the river was small and happy. But when the current swept us around the first bend, the voice became a roar. We entered the first rapids, splashing over the smooth rocks. The kayakers were very bouncy, the kayak's bow bounced on sharp rocks. We had plenty of flotation left, but thereafter we went through the plunging white-water uncomfortably low. At the upper end, the sides of the canyon are adorned with cedar, hemlock, white pine, and hardwoods clutching precariously to the steep sides. Peter told us that the rock here was mostly basalt, a dark rock of volcanic origin. Rapids followed rapids, broken only by swift, slick stretches as the river twisted and turned through this awesome gorge. There were several small falls, and we swooped down them without a thought or a problem. We stopped several times--to photograph, to attempt to patch the bottom of the rubber kayak, but most of all just to look and listen. You feel strangely transported backward in time in this wild, secluded place. Somehow, you almost expect to come around a bend and meet a party of voyageurs or a Chippewa fishing with a spear. Yet perhaps the most beautiful part of the canyon is the lower end. Here the walls, mostly a sandstone conglomerate, are eroded and weathered into strange shapes. There are spires of rock that reach skyward like pointing fingers, and the towering cliffs seem almost to tip inward. And then, quite abruptly, you pop out of the canyon. The river goes slack, and the landscape is low, covered with birch and soft maple. As we paddled silently toward the car parked at the Highway 122 bridge, I recall wondering if there was time to make the run again. There wasn't, but there will be time another day to return to this beautiful place so undisturbed by man and so very special because of it."

MONTREAL RIVER CANYON
A MANAGEMENT PLAN
TOWN OF SAXON

OCT 1980

Montreal
River
Canyon

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MONTREAL RIVER CANYON
A MANAGEMENT PLAN

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302 WALNUT STREET
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Walter Sherman

October, 1980

Mr. Louis Leoni
Iron County Board Chairman
Iron County Courthouse
Hurley, WI 54534

Dear Mr. Leoni:

We are pleased to present the Montreal River Canyon plan to Iron County.

This plan will help provide a guide for future management consideration of the Montreal River Canyon between Saxon and Superior Falls.

We would like to thank Iron County for their assistance in preparing the plan.

Sincerely,

Fred Goold
Landscape Architect

FG:bjd

INTRODUCTION

The Montreal River in Iron County begins with an east and west fork, merges into one river and flows north into Lake Superior forming the border between Michigan and Wisconsin. The native name for Montreal River was kawasiji-wangsepi which means white falls river. Approximately three miles south of where it enters Lake Superior, the river has eroded through bedrock formations to create a canyon approximately two river miles in length and over 200 feet deep.

Access to the canyon is extremely limited which has served to protect its unique wilderness character. The canyon is a beautiful wild place and deserves to be preserved as a scenic resource for future generations.

The objectives of this report are: first, to create an awareness of the unique qualities of the Montreal Canyon and its adjacent environment; second, to identify and describe the landscape features and scenic attributes of the canyon; third, to explore management alternatives; and fourth, make recommendations for the canyon.

As part of the planning process a citizens planning committee participated in making management and site recommendations.

BACKGROUND

The Montreal Canyon is located on the Montreal River in Iron County approximately three miles from Lake Superior (See Figure 1). The Montreal River begins its flow to Lake Superior from Pine Lake and has a total drainage area of 277 miles. Flowing in a general north-northwest direction, the stream empties into Lake Superior and for a majority of this flow length, the Montreal serves as the political boundary dividing Wisconsin from the State of Michigan.

In the past this area was one of intensive iron ore mining, with principal mines located in the Ironwood, Hurley and Montreal districts. Ore shipments to Ashland for transfer to lake bound shipping took place until 1964, when the last mine was closed. The remains of old, abandoned railroad grades are still present and alter natural drainage patterns.

It should be pointed out that the now-closed old Hurley sewage plant, as well as the now operating Ironwood sewage plant, are both on the banks of the Montreal River. Within both these cities there may be sufficient discharge to noticeably affect the water quality. The rest of this basin area generally lacks industrial and major agricultural land use.

REGIONAL LOCATION

MONTREAL CANYON

on the
MONTREAL RIVER
IRON COUNTY WL

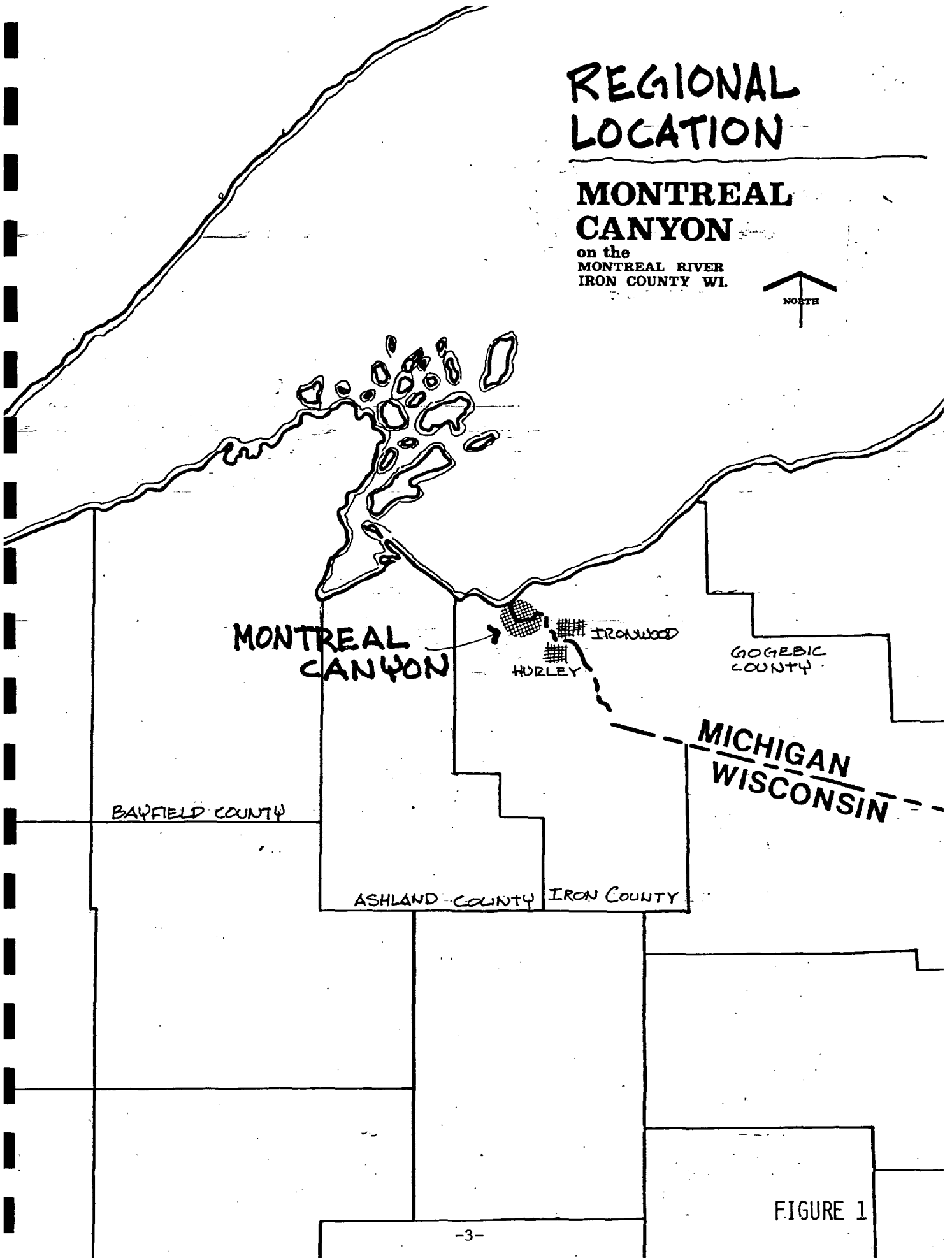


FIGURE 1

● HISTORY

The name for the Montreal River is one of the oldest on the map of Lake Superior, probably being assigned by Duluth or some of the Jesuits that preceded him. It is found on a map of 1688, and may have originated from a resemblance between the bluffs at its mouth and the mountain Montreal in Canada (Thwaites 1910:179).

The Flambeau Trail

It is evident from historic records that the Montreal River and an associated portage trail known as the Flambeau Trail were considerably important to various enterprises from 1661 to 1880, and probably earlier. Indians, explorers, fur traders, missionaries, miners and others, all used the trail for approximately 220 years making it a significant route from the Lake Superior shore to Lac du Flambeau and points south.

The Flambeau Trail started at the mouth of the Montreal River and continued overland through dense pine, spruce, hemlock, birch, and cedar to a crossing on the Montreal just above Saxon Falls. The trail at this point veered to the east of the Montreal Canyon. From there, it ran generally southeast through the Penokee Range, passing present-day Montreal on the west, to another crossing on the west fork of the Montreal River (Gile Flowage). The trail then continued southeast, crossed the east fork of the Pine River to Long Lake. From Saxon Falls

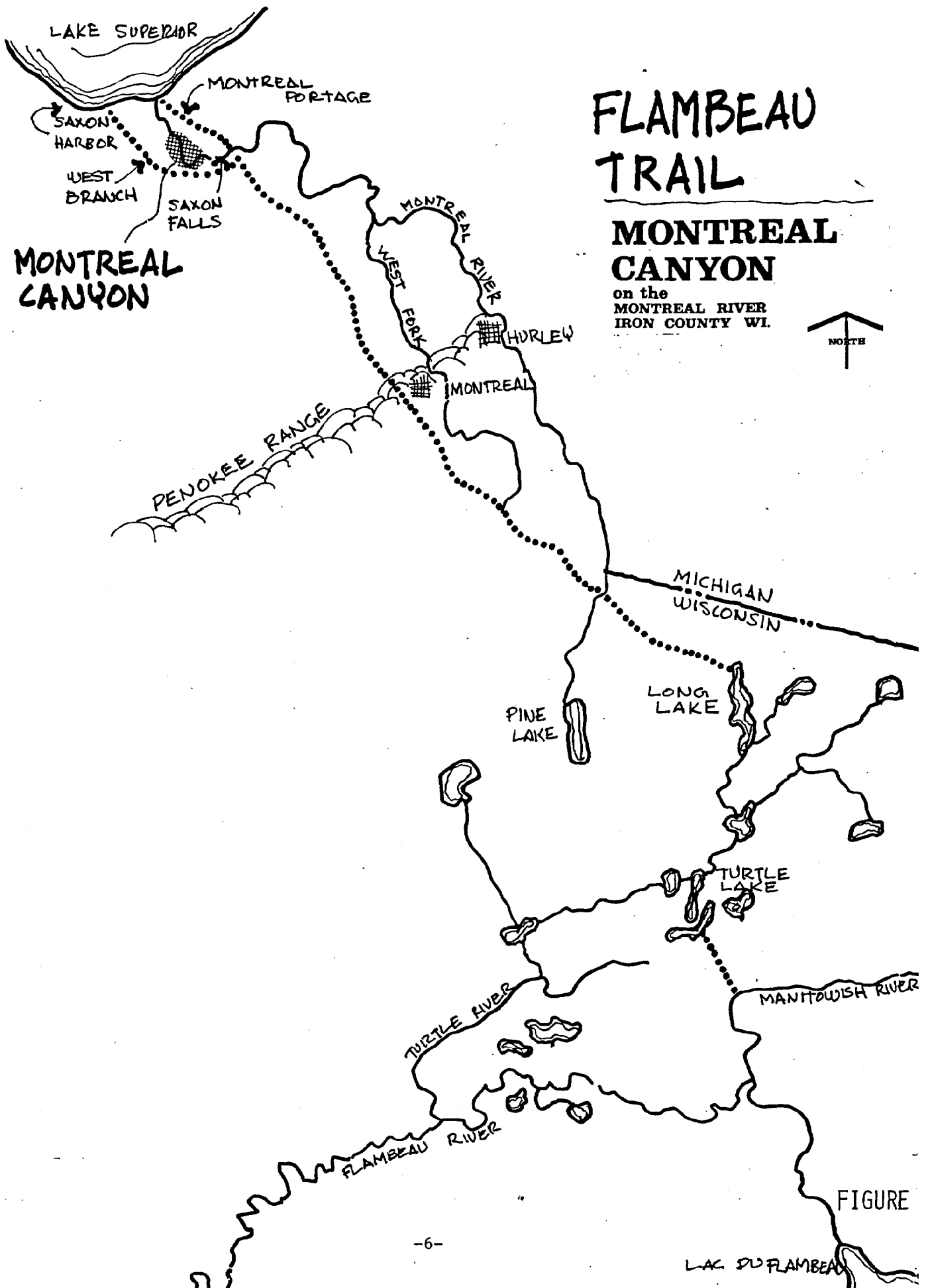
to Long Lake the country is characteristically a succession of hills, cedar swamps, and creeks. The total distance from the mouth of the Montreal to Long Lake is approximately 45 miles (see Figure 2). At Long Lake canoes were used for the remainder of the route south to Lac du Flambeau.

The Flambeau Trail was used by missionaries as a route to the interior and the Reverend Sherman Hall, stationed at La Pointe, gives the following account in his diary for 1831:

This morning I left La Pointe for a visit to Lac du Flambeau accompanied by one man, to carry my provisions and baggage, and as my guide through the woods. Our way lay down the lake about 20 miles to the mouth of the Montreal River. As I had only one man with me, I was obliged to take a paddle and manage one end of the canoe myself. About 4 o'clock P.M. we reached the place we were to leave the lake. Here we laid up our canoe, formed our baggage into packs, my man taking our provisions and cooking utensils, and I my blanket and coat and a gun, and commenced our march across the Forty Five Mile Portage. We had gone but a few rods from the trading post at the mouth of the Montreal, before we found ourselves immersed in a thicket of large hemlock, birch and maple timber. We continued our march about an hour and a half and reached the fording place in the Montreal River. The river is several rods wide at this place and very rocky (Culkin 1936; Nute Papers n.d.).

Copper Discoveries

Copper discoveries also brought activity to the Montreal Canyon area. A mine was started near the upper falls in what later was surveyed and recorded as being in Lot No. 4 - a part of NW 1/4 of SE 1/4 Sec. 20 T47N-R1E, now the property of Arvo Crego. As D.D. Owen was making his survey of the territory he worked south from Madeline Island to



the mouth of the portage that would lead him to the headwaters of the Wisconsin River. He camped at this place overnight, continuing his journey on September 19, 1847, to a copper mine near the upper falls where he met another surveyor, J. Whitney. He then returned to the falls where he camped again before resuming his journey to Portage Lake. Those working the mine must have been doing so on a staked claim, for there were no official titles or patents granted on that property until December 20, 1886. The grantees may have had an earlier interest, but the economic situation at that time may have been a factor in the suspension of operations. However, considerable work had been done and the future must have looked favorable, for some buildings had been built and a garden was planted just across the canyon on the Michigan side just upstream from the mine.

The Montreal River portage trail was getting a lot of use at this time. According to the first survey map of that area in Michigan north of the mining operation, made in 1849, two trails branched off the main trail between the mouth of the river and the upper falls. One left the main trail in the NW 1/4 of the SE 1/4 Section 14 T48N-R49W and led to a spring near the river and almost directly across the river from the mine. The other trail branched off the main trail near the center of the NW 1/4 of Section 24 T48N-R49W leading to the garden and continuing on to the spring, thus forming a loop with the other trail. At this same time there was a small clearing and an Indian campsite where the Montreal Trail reached the high ground on the east side of the mouth of the river. The location of the mine shaft is still evident on the Wisconsin side of the canyon.

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 Iron County, Wisconsin / 'c prepared by Fred Goid. %
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 \$ 12 710 1 Wisconsin. 'b Northwest Regional Planning Commission. %

● HYDROLOGIC DESCRIPTION

The trunk length of the Montreal River is 37.2 miles and has an average gradient of 27.0 feet per mile. It is a soft water stream having slightly alkaline, medium brown water. There are two impoundments located on the stream, Superior Falls Flowage and Saxon Falls Flowage; stream flows are influenced by these hydro-electric developments. In addition, a dam on the Gile Flowage, located on the West Fork of the Montreal River, influences flows in this stream.

Inhabited by brook trout, brown trout and some rainbows, the stream is classed as trout water. During the spring, steelhead (rainbow trout) move into the stream up to Superior Falls which is located about one-third mile upstream from Lake Superior. In addition coho salmon, brown trout and brook trout may also enter this stream. Warm water species, particularly northern pike, muskellunge and walleye, may be found in the vicinity of the two flowages.

A stream flow gauging station, located upstream from the Superior Falls Flowage at the lower end of the canyon, has recorded a range of two to 6,600 cubic feet per second. Average discharge for 28 years of record is 324 cubic feet per second. The flow of the Montreal River at this gauging station exceeds 147 cubic feet per second 70 percent of the time. The river exhibits extreme flow variations, and low flow at certain times is a definite navigation problem.

The present dam rebuilt in 1940 has a total overall length of 510 feet, of which 260 feet is earth embankment on the south, or Wisconsin, end.

A pipe line six feet in diameter and 1600 feet long extends from the head gate in the dam to a surge tank 24 feet in diameter and 58 feet high located near the power house. Both the stand pipe and pipe line were originally built of hemlock but were rebuilt with redwood in 1929. From the stand pipe, two 54 inch steel penstocks lead to turbines below.

The power house is a reinforced concrete structure 52' x 30' and 16' high from the generator floor to the ceiling. Installed in the power house are two James Leffel horizontal hydraulic turbines rated at 1000 H.P. each, built to operate at a 135 foot head. Connected to each of the turbines is a General Electric A.C. generator, 625 KW, at 80% power factor. The electric energy is generated at 2300 volts.

Saxon Flowage has sufficient capacity to operate this plant and also the Superior Falls plant, which is situated three miles downstream, for a period of about 50 hours at full load during the lowest river stages.

The output of the Saxon Falls plant is distributed to the transmission system through a substation located across the river from the power house. This energy is transmitted to the Ironwood substation

over a 33,000 volt line, being connected also to the output of the Superior Falls plant which is located approximately three miles downstream from Saxon Falls. The road leading to the substation is the only access point to the river below Saxon Falls.

●GEOLOGY

The canyon of the Montreal was cut through rocks primarily of Precambrian Age laid approximately 1100 million years ago. At the top of the canyon and for several miles above, the river flows through and on the Portage Lake series of volcanic rocks and interbedded sandstones and conglomerates of lower and middle Keweenaw Age. These lavas flowed out into the Lake Superior syncline sometime between 1100-1600 million years ago. This formation, nearly 2,000 feet thick is tilted at angles of 45° - 60° to the north and is also found on Isle Royale (Figure 4).

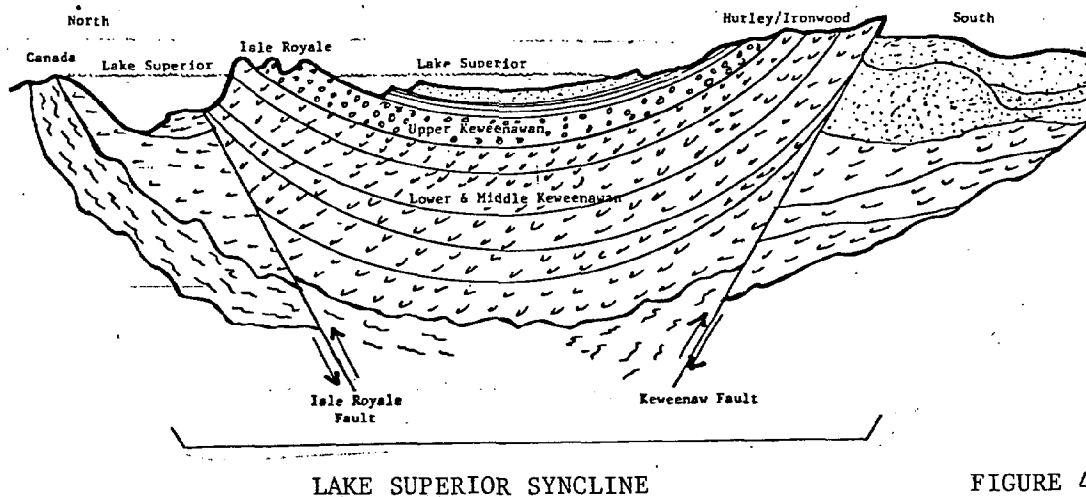
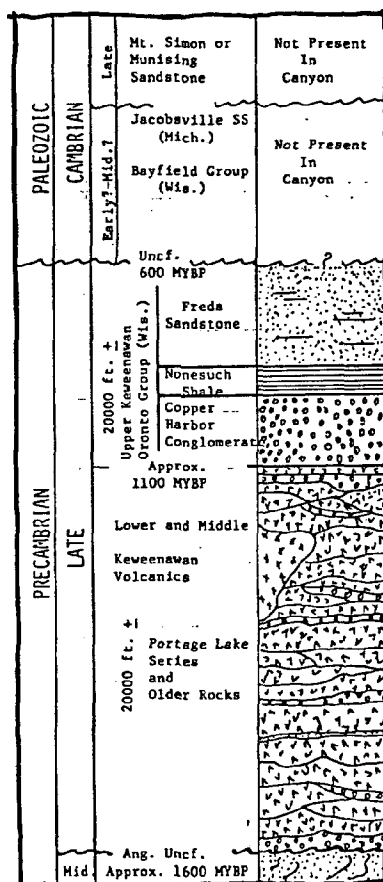


FIGURE 4

Diagrammatic north/south geological cross section of the Lake Superior syncline. Major unconformities are illustrated by heavy wavy lines. The position of geologic and geographic features are approximate. Lithology and thickness are generalized.

About 1100 million years ago (late Keweenaw) volcanic activity died out and a sequence of conglomerate, shale and sandstone up to another 20,000 feet thick was deposited in the Lake Superior syncline.

The bottom unit in this sequence is the Copper Harbor Conglomerate. The next unit is the Nonesuch Shale. The youngest Upper Keweenaw unit is the Freda Sandstone. Most of this sediment was derived from the older area to the south, but some also came from newly exposed lower and middle Keweenaw rocks on the edge of the basin (Figure 5).



GENERALIZED STRATIGRAPHIC COLUMN

FIGURE 5

Generalized stratigraphic column summarizing Late Precambrian and Early to Middle Cambrian (?) geologic history and rock nomenclature for the Montreal River Canyon.

After the Precambrian, the area underwent a period of sandstone deposition during the Cambrian. This group, up to 4,000 feet thick, is not found in the area of the canyon but does outcrop nearby on the Bayfield peninsula and in the Apostle Islands.

During the balance of the Paleozoic, Mesozoic and Cenozoic Eras, covering approximately 600 million years, the area underwent an erosional cycle which lowered the uplands and generally shaped the land as we now see it. Around two million years ago during the Pleistocene, the area was subjected to several glacial advances and retreats which served to smooth out the uplands and deepen the Lake Superior Basin.

River Profile

Saxon Falls occurs where the river cascades over ledge of basalt of the Portage Lake Series. The total drop of this set of falls is approximately 115 feet and signals the start of the canyon. Approximately one-half mile below the falls, the river cuts through the Copper Harbor Conglomerate. This portion of the canyon has sheer walls of conglomerate nearly 225 feet high. After passing through several large meanders, the side walls become shale and very quickly grades into the Freda Sandstone. The exposed bedrock here at the mouth of the canyon, remains the same until the river passes over Superior Falls and enters Lake Superior. Note Figure 6.

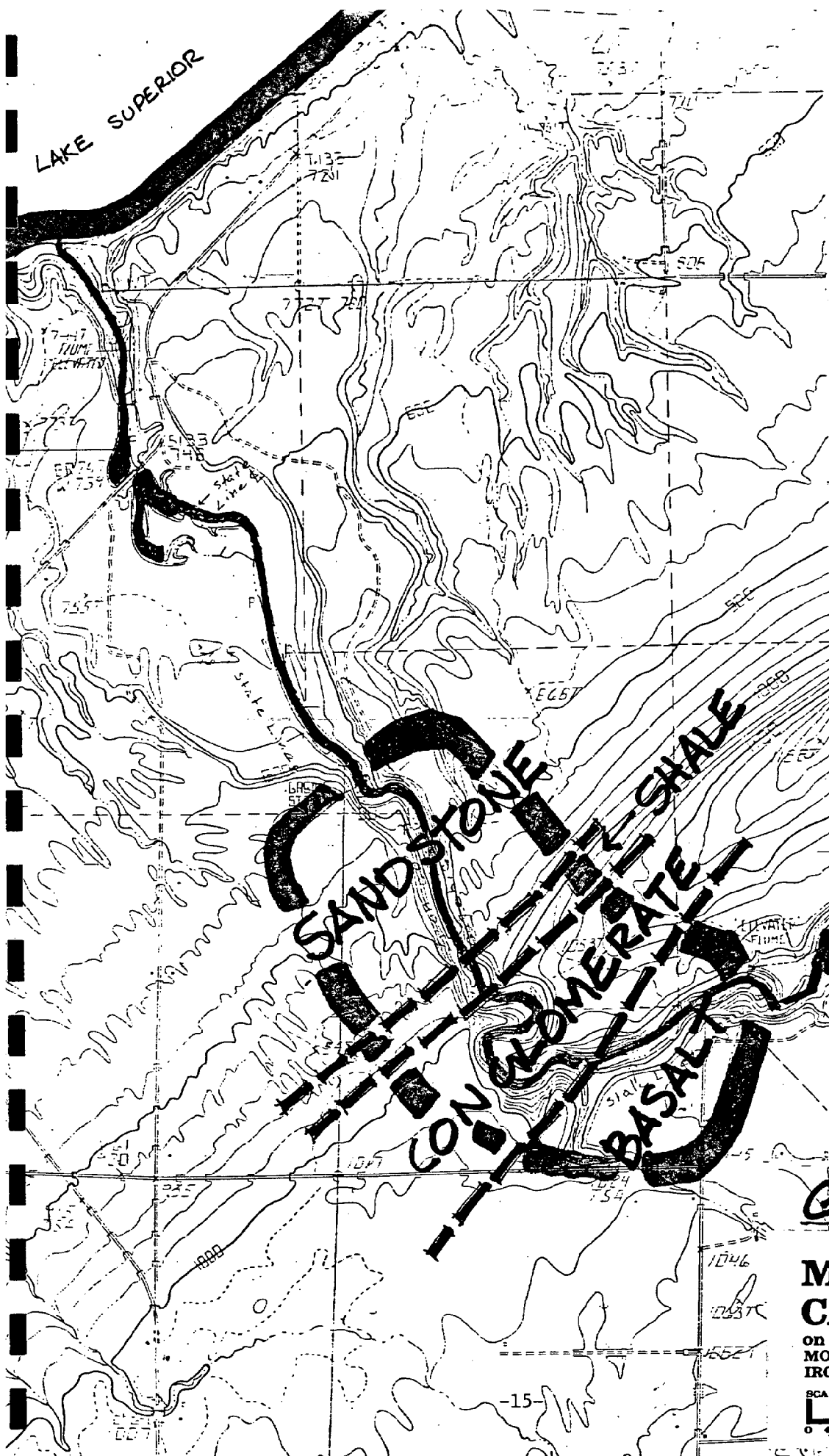


FIGURE 6

GEOLOGY

MONTREAL CANYON

on the
MONTREAL RIVER
IRON COUNTY WI.

SCALE IN FEET
0 400 800 1200 1600 2000



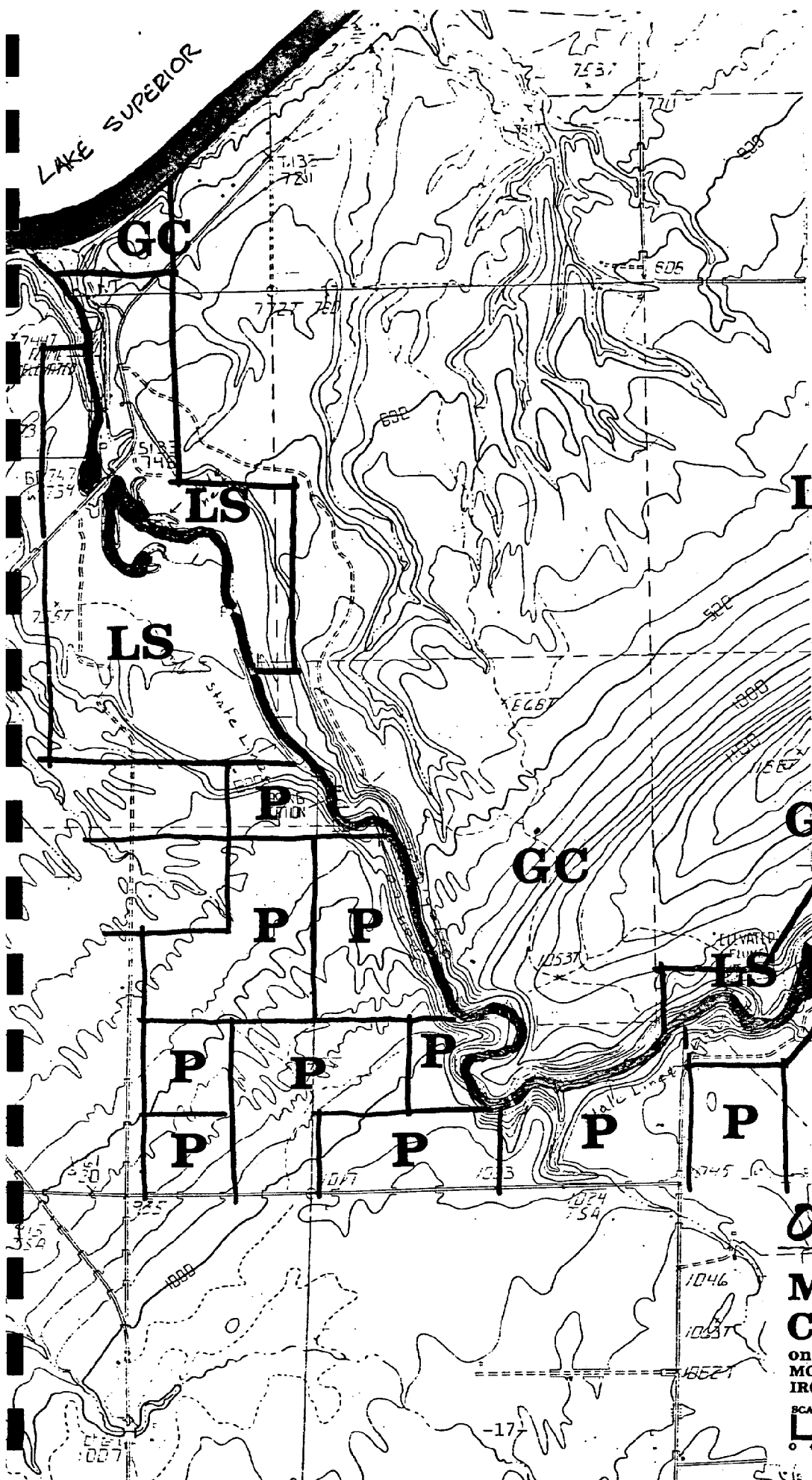
Canyon Formation

While we do not precisely know when the canyon was formed, we can make statements regarding the general formation process. This area is breached by many northward flowing streams. Most of those streams utilized pass through the basalts that were formed during the long erosional period of the Paleozoic, Mesozoic, and Cenozoic eras when streams gradually cut down into the Precambrian bedrock beneath. During glacial times, these valleys were probably filled with debris left by the glaciers. In postglacial times with renewed erosion by flowing water, new streams found it easy to scour out the Pleistocene fill and reoccupy the old valleys and continue downcutting.

● OWNERSHIP AND ACCESS

As Figure 7 indicates the land on either side of the river is controlled by five individual private owners, Lake Superior District Power Company and Gogebic County Michigan. Lake Superior District Power Company controls the shoreline of both flowages and a small portion of the river near the canyon. The canyon portion of the river is owned by Gogebic County on the Michigan side and five private owners on the Wisconsin side.

The Lake Superior District Power Company does, however, maintain flowage rights to the Michigan side and a portion of the Wisconsin side of the Montreal River. Hence, the possibility exists for



P-PRIVATE

**LS-LAKE
SUPERIOR
DISTRICT
POWER
CO.**

**GC-GO GEBIC
COUNTY
MICHIGAN**

FIGURE 7

OWNERSHIP

MONTREAL CANYON

on the
MONTREAL RIVER
IRON COUNTY WL.

SCALE IN FEET
0 400 1000 3000



development of another hydroelectric station and flowage between the two existing flowages. The flowage rights are as follows:

All the right privileges, franchises, easements, licenses, permits, grants, and reserves of the company however conferred or acquired to flow, flood or overflow by means of any dam or dams now or hereafter constructed or maintained in the Montreal River, together with the right to build, construct operate and maintain transmission lines over across and upon any and all of the following described premises.

Access to the Montreal River and canyon between the two flowages is extremely limited (note Figure 3, Page 10). The only developed public access to the river is at the bridge on Wisconsin Highway 122 at the Superior Flowage.

The other developed access points are on Lake Superior District Power Company lands above the hydroelectric station at Saxon Falls and at the Saxon Flowage dam. Permission should be obtained from the Power Company to use the access at the hydro station. Public access to the river can also be gained on the Michigan side through Gogebic County forest lands.

●WILDLIFE

The wildlife resources of the area regularly reward hunters, fishermen, photographers and wildlife observers. A wide variety of game exists most important of which are the black bear and white tailed deer. Also common in the area are ruffed grouse, coyote, fox, skunk, porcupine and squirrel. Song birds and birds of prey inhabit the area as well.

●VEGETATION

The area of the Montreal River in northern Iron County is composed of mixed hardwoods and conifers. Primary hardwood species include northern red oak, aspen, sugar and red maple, paper and yellow birch, and basswood. Conifers most common include red and white pine, cedar, hemlock, balsam fir and spruce. Shrubs found both in and along the canyon include blueberry, sweet fern, hazel, juniper, bearberry and thimble berry.

The nature of vegetation changes from the higher reaches above the canyon--cedar, hemlock and pine and to the lower elevations near the Superior Flowage--soft maple and yellow birch.

In many cases trees and shrubs, most notably cedar and spruce, cling to the sides of the canyon walls. Current logging pursuits both on the Michigan and Wisconsin sides are primarily for aspen/pulp.

In some cases trees are being felled into areas immediately bordering the canyon, making it extremely difficult to walk along the canyon rim as well as detracting from the natural beauty of the immediate rim area. There are other areas along the canyon corridor where timber appears to be mature and could be harvested by selective cutting without altering visual quality.

●LANDSCAPE CHARACTER

Analysis of the Montreal Canyon reveals the diversity of the river.

corridor between Saxon and Superior Flowages. The landscape character makes abrupt changes as the river flows between the two flowages.

Figure 8 indicates the diversity of landscapes within the river corridor.

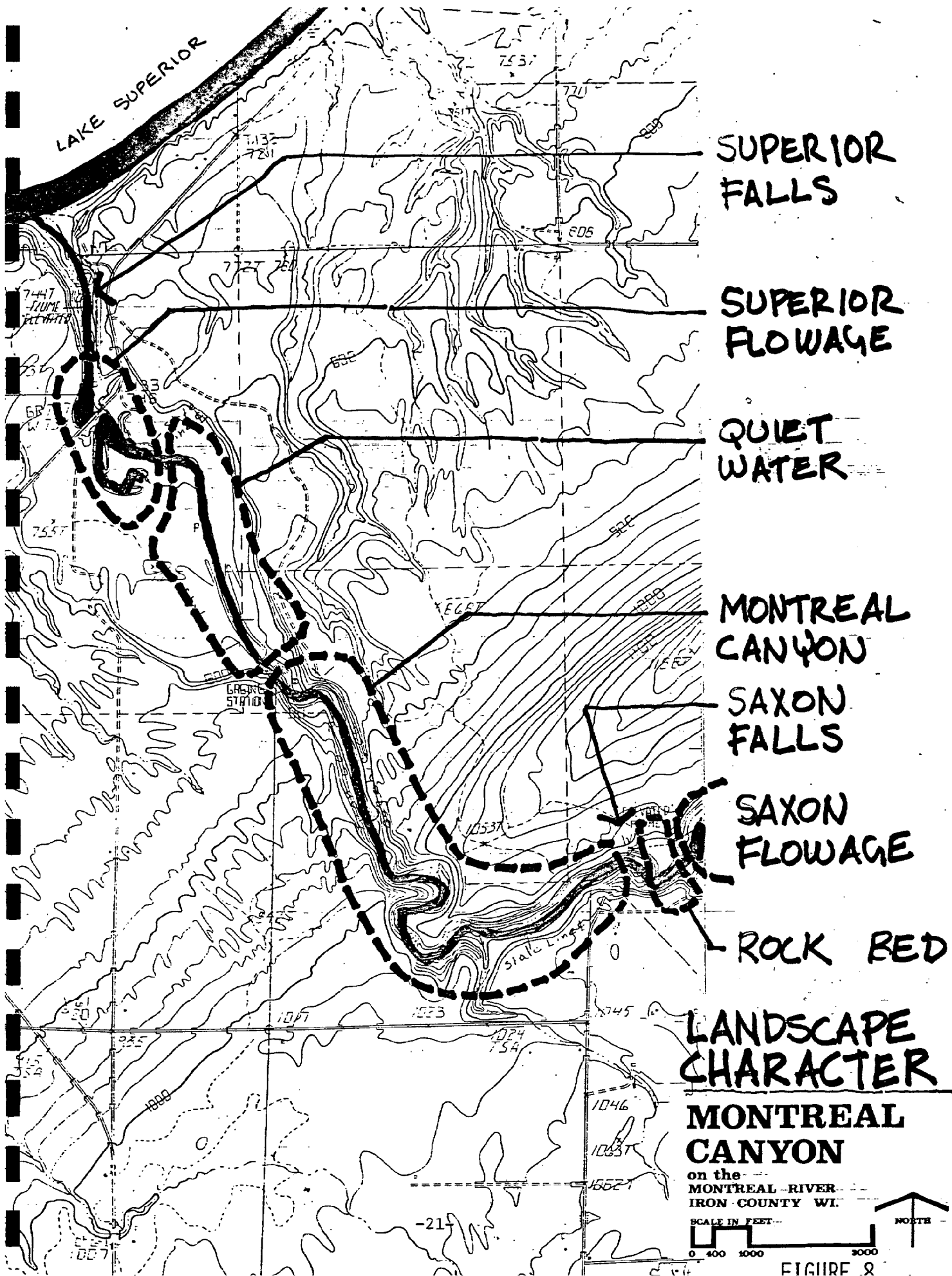
Saxon Flowage - A flowage with low banks and back-water vegetation.

Rock Bed - The portion of river between Saxon Flowage dam and Saxon Falls normally has its flow diverted through the pipeline to the hydro plant. High visable water over the falls only occurs during high water periods.

Montreal Canyon-The actual canyon of the Montreal River cuts through the bedrock escarpment for approximately two river miles.

Quiet Water - Between the Canyon and Superior Flowage lies a stretch of "quiet" river with low banks and predominately aspen, yellow birch vegetation.

Superior Flowage - A flowage created to supply water for the hydro-electric plant located above Superior Falls.



OPTIONS

● RECREATIONAL USE

Recreational use of the Montreal River between Saxon Falls and Superior Falls has both excellent potential and extreme limitations. The unique scenic quality of the Montreal River Canyon creates a natural attraction for recreational use. White water, interesting geologic formations, a genuine "midwest canyon" and panoramic views--all in a true wilderness setting--provide the resource base for a major attraction in Iron County.

Activities that can be provided would include canoeing, kayaking, rubber rafting, geologic and historic interpretation, viewing natural scenery, photography, hiking, nature interpretation, cross-country skiing and fishing.

The potential for wilderness oriented activities is excellent but limitations do exist in the Canyon corridor. The extreme variations in river flows as previously stated have been recorded from 2 to 6600 cubic feet per second with an average flow of 324 cubic feet per second over a 28 year period. This indicates that the days per year of potential canoeing/kayaking, for example, are limited. White Water-Quiet Water Canoe Guide tests the following canoeable days per month for the section of river between Gile Flowage and Wisconsin

State Highway 122: April-30 days; May-31 days; June-30 days; July-25 days; August-16 days; and September-15 days. The actual canoeable days during these periods will depend on existing water levels. The White Water-Quiet Water Guide for the Montreal Canyon section of the river indicates appropriate cubic feet per second minimums for canoeing; note appendix.

Visitor safety becomes an important factor in recreational use of the river corridor. The 200 feet plus high cliffs pose hazards to anyone not familiar with the canyon. The extreme fluctuations in water velocity of the river also creates a potential visitor safety hazard especially at high water periods. Once the canyon is entered by the river, its two mile length must be negotiated all the way through.

These hazards can be lessened and in some cases overcome with development of safety barriers, designated walkways and proper informational signing.

● THE PROBLEM OF MANAGING RIVER CORRIDORS IN MULTIPLE OWNERSHIP

The Montreal River and its canyon between Saxon Flowage and Superior Flowage lies in what is described as "multiple ownership." Private lands, public lands (Gogebic County) and utility lands (LSDP) constitute the land ownership.

Probably the single most important difference between river corridor management along rivers bordered by both public and private lands and those not in multiple ownership is that there are fewer available management options along multiple ownership corridors.

Specifically such techniques as primitive resource protection and access control are generally not feasible along rivers where there is considerable private land with the potential of unlimited access.

In the development of a successful protection program for river corridors, the management plan must recognize the importance of the "private partner." Cooperation and communication with the land owners is essential to the protection of the Montreal Canyon as well as success of any recreational development within the river corridor. Important ingredients of a management plan for a river corridor in multiple ownership generally include some fees and scenic easement acquisition, trail or access easements, local zoning and a recreational development plan. The following is a description of the effectiveness and application of some of these techniques.

● MANAGEMENT TECHNIQUES

Zoning

As an example, the Michigan scenic rivers program provides for local zoning ordinances based on state standards which could apply to the Michigan side of the Montreal River corridor. In Wisconsin, portions

of the corridor could be zoned a non-developable conservancy district to protect the scenic quality of the corridor region. However, zoning changes require local land owners support and most often even the best zoning must be reinforced with some type of acquisition.

Scenic Easements

Scenic easements are being used to protect river corridors by both the federal and state governments. Although the particular terms of the easements vary, they essentially amount to purchasing the development rights on the property. These easements generally do not allow public use of a property.

Easements seem ideal for protection of scenic river corridors. They can preserve the views and vistas without requiring outright purchase.

Along most rivers, public use of the entire corridor is not feasible or even desirable. Several possible advantages are offered by scenic easements to both the managing agency and private land owners alike. For example, scenic easements generally cost less than fee title which allows the agency to stretch the impact of acquisition funds and the easements offer permanent protection that zoning cannot. Land remains on the tax rolls and there is negotiation flexibility (negotiation easement terms). The landowners can often use their property as they have in the past and still are being paid for the easement.

Fee Title

Along multiple ownership river corridors as in the Montreal River corridor fee title acquisition has been used in varying degrees to accomplish management goals. It is most practical to acquire in fee title any land which is planned for development (i.e., parking lots, overlooks etc.)

● RIVER CORRIDOR MANAGEMENT PLANNING

The rivers of the upper Midwest have seen dramatic increases in recreation use within recent years. The number of people using some rivers has doubled in the past few years and no leveling off is seen in the trend. Management of river corridors should allow for the river and adjoining land to meet certain standards.

A principal goal for the Montreal River Canyon should be to protect the natural features of the area and provide a minimal level of public access with the objectives of maintaining the natural free flowing condition of the river; protect water quality; protect scenic, geologic, fish and wildlife, and other similar values; maintain essentially primitive shorelines and areas adjacent to the river; and provide recreation opportunities in harmony with the wild and scenic nature of the river environment.

The flowage rights of the Lake Superior District Power Company and the existing dams on the study portion of the river preclude the objective of maintaining the natural free flowing condition.

Regulating public behavior on semi-developed sites is a management challenge. There are many reasons why the public cannot be given free roam in environmentally sensitive areas such as the Montreal River Canyon. For example, trying to protect the area from degradation, provide for visitors' safety, protect private landowners' rights and attempt to accommodate a reasonable number of visitors will require compromises.

The resource must be managed in a way to apply the minimum amount of necessary controls in an inconspicuous way once the visitor reaches his destination. The most-effective control probably is to separate the visitor from his vehicle as soon as possible and get him to travel on foot.

● MANAGEMENT CONCEPT

The concept of "design capacity" states that the management of a resource-oriented recreation area is conditioned by three characteristics:

1. The capability of the resource to sustain recreational uses.
2. The desire and expectations of the visitors.
3. The intensity of management that is available.

The capability of the resource refers to the amount and kind of use it will withstand. This feature of design capacity is difficult to qualify in terms of allowable user pressure. A visual assessment of current site conditions combined with a resource evaluation for development of facilities such as trails, overlooks, restrooms, etc., gives some indication of resource capability. The Montreal Canyon site showed almost no visual evidence of any resource damage except for a current logging operation. The site analysis has shown there are areas suitable for development with limitations--particularly access, ownership and excessive slopes.

The desires and expectations of the visitor can generally be viewed as a series of alternatives. At one end of the scale would be areas of highly developed facilities where one would anticipate encountering many people. At the other end of the scale would be an area of minimal development with little or no visitor facilities and where one would not expect to meet or see many people.

Intensity of management depends on the amount of funds, governmental responsibility and local effort put into an area. This varies to some extent according to the amount of use anticipated, existing site conditions and land ownership controls. For example, the environmentally sensitive conditions of parts of the Canyon will require more intensive management to maintain as visitor use increases. If administrators anticipate they can only provide a minimum of management then they may have to consider further controls of access minimizing use or they must accept site deterioration.

RECOMMENDATIONS

The citizens planning committee recommended a low intensity of management for the Montreal Canyon based on the following three characteristics discussed on page 27.

1. The capability of the resource to sustain recreational uses.
2. The desire and expectations of the visitors.
3. The intensity of management that is available.

Using these three considerations, the Montreal Canyon Corridor should remain a largely undeveloped area providing limited access for small numbers of visitors. This would satisfy the visitors and administrators and help protect the resource. The administrators could be private, county, state, federal or a combination of municipalities. A site management recommendation that should be applied to any alternative is the adoption of WDNR's "STAND TREATMENT METHODS IN AESTHETIC ZONES" for northern hardwood types. This method should be practiced within the corridor of the Montreal River between Saxon Flowage and Lake Superior. This zone should be a minimum of a quarter mile wide on each side of the river.

● ALTERNATIVE 1

Develop a primitive walk-in access to the primary scenic overlook of the corridor.

● Site Recommendations:

- a. Small parking area (8-10 cars) on CTH B
- b. Brush and mark a trail approximately 1/2 mile in length
- c. Construct minimal visitor safety control (wood rail for about 300 feet.
- d. Selective cut vegetation at several overlook points.

● Management Recommendations:

- a. Utilize trail easement to obtain access.
- b. Obtain in fee area of overlook.

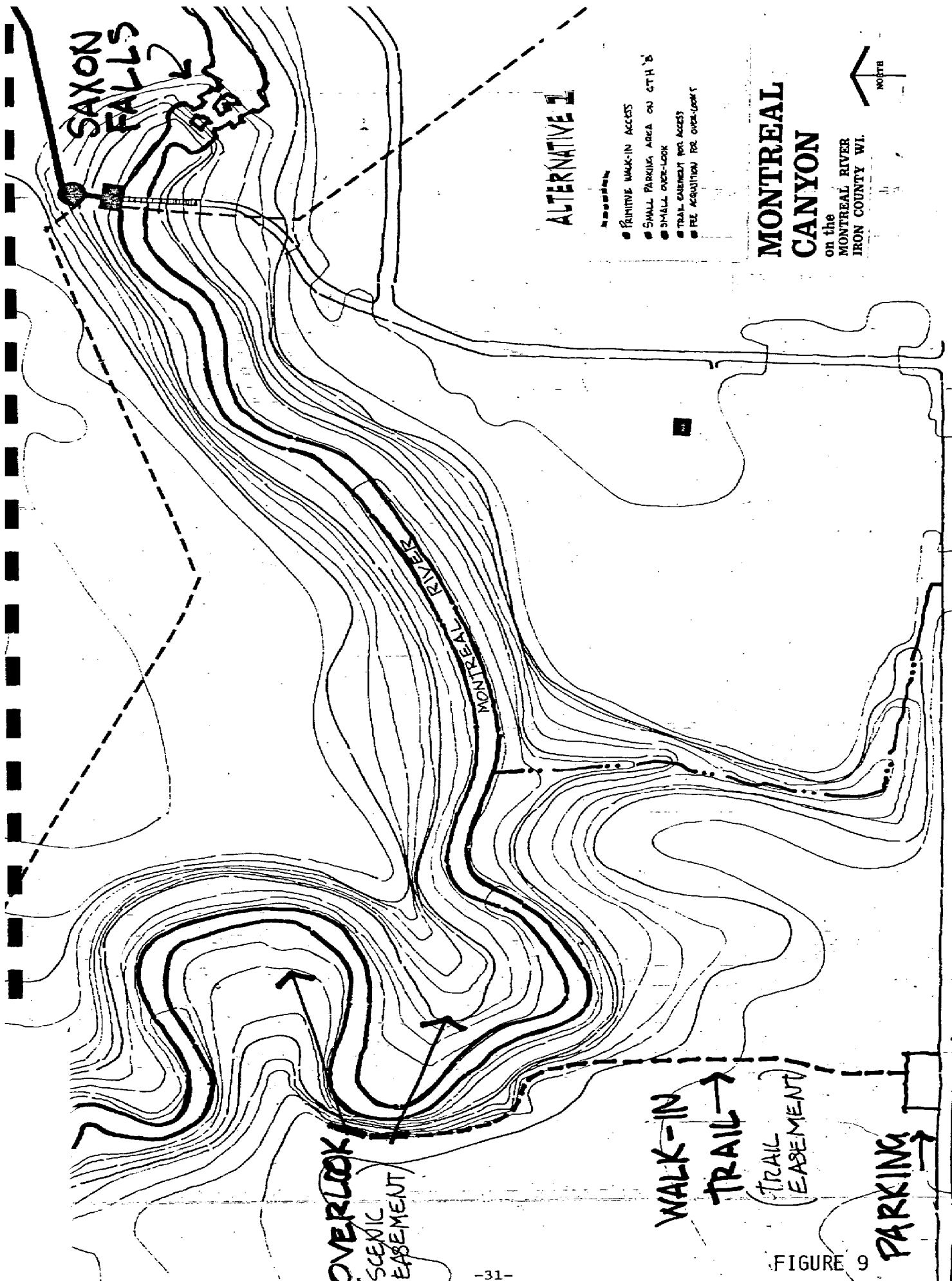


FIGURE 9

● ALTERNATIVE 2

Develop a trail from Saxon Falls to primary scenic overlook at canyon meander with selected overlook and river access points.

● Site Recommendations:

- a. Improve parking at Saxon hydroelectric plant on Wisconsin side.
- b. Develop trail and overlook to Saxon Falls (approximately 300 feet from parking area.
- c. Develop trail along Canyon rim from parking area to primary overlook (approximately 3/4 to 1 mile).
- d. Provide access to old copper mine and to bottom of canyon.
- e. Develop overlooks with wood railing in selected areas.

● Management Recommendations:

- a. Develop cooperative agreement with Lake Superior District Power Company for parking area and access to the falls.
- b. Obtain scenic and trail easements from private landowners along canyon corridor.
- c. Obtain in fee the area of primary overlook at the Canyon meander.
- d. Develop scenic easement agreement with Gogebic County for Canyon rim in Michigan.

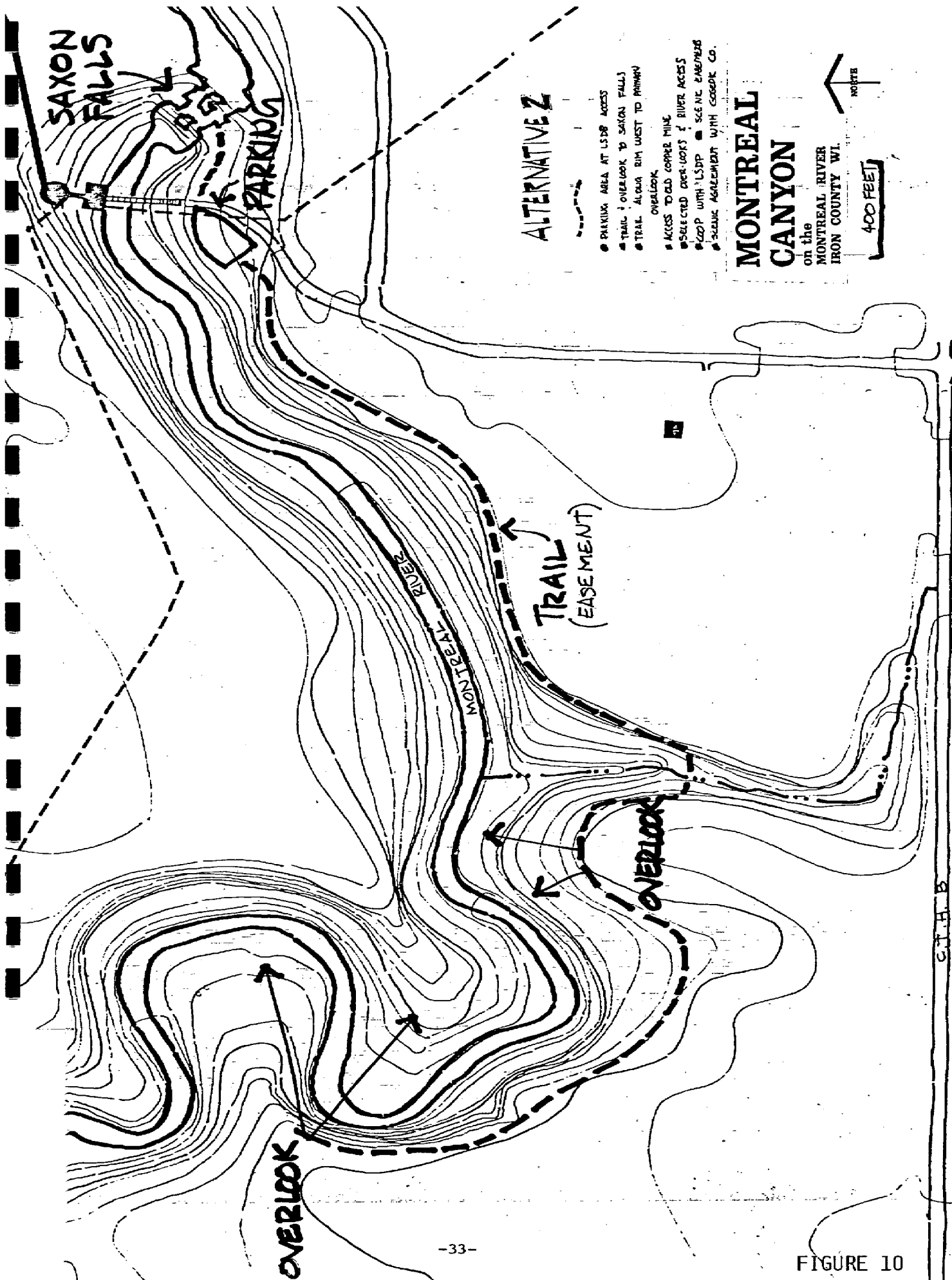


FIGURE 10

●ALTERNATIVE-3

Develop a major trail paralleling the river corridor from Saxon Flowage to Superior Falls.

- Site Recommendations:

- a. Develop two access points: at Saxon Flowage Dam and at Superior Falls. Access points to provide improved parking (8-10 cars) and informational signs showing the Montreal Canyon Trail in respect to the canyon, falls, Flambeau Trail and copper mine.
- b. Provide overlooks at designated sites.
- c. Provide river access off main trail.
- d. Construct trail safety features where needed (steps, rails, etc.).

- Management Recommendations:

- a. Develop cooperative plan with Lake Superior District Power Company for access points and trails on their lands.
- b. Obtain trail easements on private lands.
- c. Obtain in fee possible lands where overlooks and trails are developed.
- d. Develop scenic easement agreement with Gogebic County for canyon rim (300' deep) on Michigan side.

ALTERNATIVE 3

- TWO ACCESS POINTS - SAXON FLOWAGE -
- SUPERIOR FALLS
- TRAIL PARALLELING RIVER
- WALK-IN ACCESS TO RIVER
- OBTAIN SCENE EASEMENTS FROM PRIVATE PROPERTY OWNERS

MONTREAL CANYON

on the
MONTREAL RIVER
IRON COUNTY WL.

SCALE IN FEET

0 400 1000 2000

NORTH

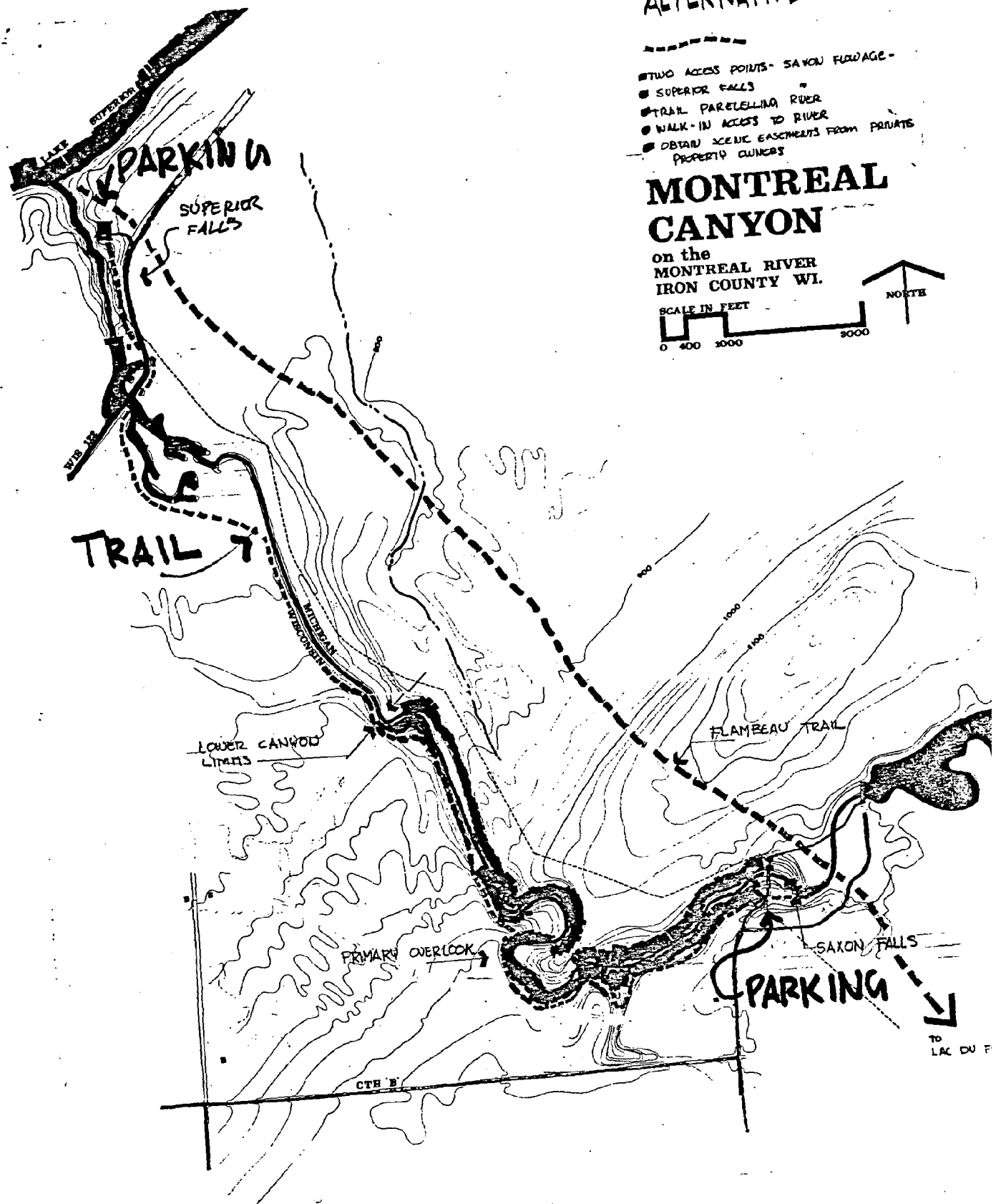


FIGURE 11

● OTHER ALTERNATIVES

- a. Promote canyon corridor as Wisconsin Scientific Area.
- b. Obtain scenic easements 300 feet back from rim along canyon corridor with no other developed access. Only access to canyon would be by river.
- c. Consider future development of Flambeau Trail branch from Saxon Harbor to Montreal Canyon.

CONCLUSION

This study has identified the Montreal Canyon Corridor as a unique scenic resource highly sensitive to any development. Access to the canyon is desirable but at a minimal level with primitive facilities.

The unique nature of the resource does not require intensive management but rather protection from over-management.

The Montreal Canyon provides a visual link with the geologic, historic and cultural history of Iron County. If protected while at the same time providing the opportunity for access, it will significantly add to the quality of the Iron County's scenic resources.

APPENDICES

APPENDIX A

CITIZEN PLANNING COMMITTEE

1. Ernest Valkama - Saxon
2. Arvo Crego - Saxon
3. Herb Kinney - Hurley
4. Bill Carow - Ironwood
5. Ken Clements - Saxon
6. Jim Butterbrod - Hurley
7. Geof Wendorf - Hurley

Geology Consultant - Steve Andrews

MONTREAL RIVER

Montreal River: Iron County, Wisconsin, and Gogebic County, Michigan.

Topo Maps: Little Girls Point (1:82,500) 1956 and Ironwood, (1:82,500) 1955.

Overview map: Ashland (1953).

Public lands: Iron County plat book (1969) and Michigan DNR map of Gogebic County (West) 1968.

Section 1

Start: West Branch of Montreal River below Gile Flowage, at the Highway 77 bridge.

End: Wisconsin Highway 2 bridge.

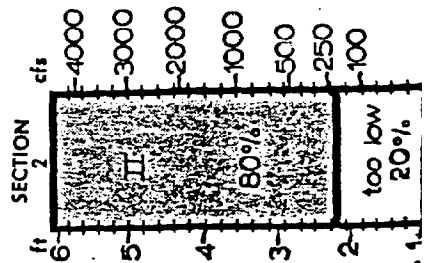
Section 2

Start: Below Saxon Falls Dam, off of County Highway B.
End: Wisconsin Highway 122 (Michigan Highway 505) bridge.

SEC. 1 SEC. 2

Difficulty (high water)	III	II
Difficulty (usual summer flow)	II-III	II
Length	5	4
Time	4	3
Width	6-80	20-100
Gradient	70	--
Drainage area	--	262

Water Conditions: Average flow for 32 years is 325 cfs. The gauge was located in Gogebic County, Michigan, on the right bank about 1.5 miles downstream of the Saxon powerhouse. Section 1 is on the West Branch of the Montreal River, which is the outlet for the Gile Flowage. Check with the people at the dam to see if the gates are open before running the river. This is a sporty river with many challenges. The water level



for Section 2 should be checked out with the people at the Saxon Dam, (715) 562-2770.

Canoable Days Per Month

month	Apr	May	June	July	Aug	Sep
days	30	31	30	25	16	15

Scenery: Both sections described here are very beautiful. Section 2 has a lovely canyon with sheer cliffs of weathered sandstone that makes it particularly outstanding.

Campgrounds: Saxon Harbor Park has developed sites. It is located off County Highway A on Lake Superior. This campground is run by the Iron County Parks Commission, Courthouse, Hurley, Wisc. 54534. Call (715) 561-2695. A user fee is charged.

Points of Interest:

Section 1

(0.0 miles) Highway 77 bridge. This is the recommended put-in. There is a park west of this bridge in Montreal where cars can be parked.

(1.2 miles) Bridge. From the put-in to this bridge, the water is fast, but there are no drops or rapids. Some large boulders mark the beginning of Railroad Bridge Rapids. Get out and scout when the railroad bridge is in sight. These rapids can be run, but they are wild. They consist of a series of ledges which are close together. The whole stretch must be run once started. There is no way out in case of a capsize. The left shore is a 60-foot high rock wall. Width of rapids is 6 to 20 feet. Portage on the right side and get up on the railroad tracks as quickly as possible. Carry on the tracks about 400 feet or so around a curve going west. Stop on the bridge and admire the roaring rapids—then walk to the beginning of the next curve. There you can slide the boats down a steep bank to the river. Put-in as soon as possible.

(2.4 miles) Chicago & Northwestern Railroad bridge. A stretch of several hundred yards of good grade III rapids follows the bridge. Then there is a drop which should be scouted. Continuous rapids follow, but you can get in to shore occasionally. The next drop should be scouted, too. It is best to follow the main flow of water in the middle of the river. It is necessary to make some pretty sharp turns to avoid rocks and boulders. A mile or so below the railroad bridge, there is a park on the left shore.

(4.0 miles) Steel bridge. At the bridge, you hear the roar of a waterfall. The first drop is easy, but it is best to do some thorough scouting. The falls can probably

feet of white water with a turn to the left. The total drop is probably 15 feet or so, and there are some nice standing waves at the bottom. About a hundred yards below the falls, there is a four-foot drop which should be run very close to the right shore. The chute has a 90 degree turn to the left; be careful not to run into the rock on the right side. There is another mile and a half of continuous rapids to the take-out. There are a lot of rocks to dodge but no need for scouting. Access to shore is pretty good.

(5.1 miles) U.S. Highway 2 bridge. The recommended take-out is on the right bank upstream of the bridge.

There is a gravel road on the west side of the river that goes back to Montreal (six miles).

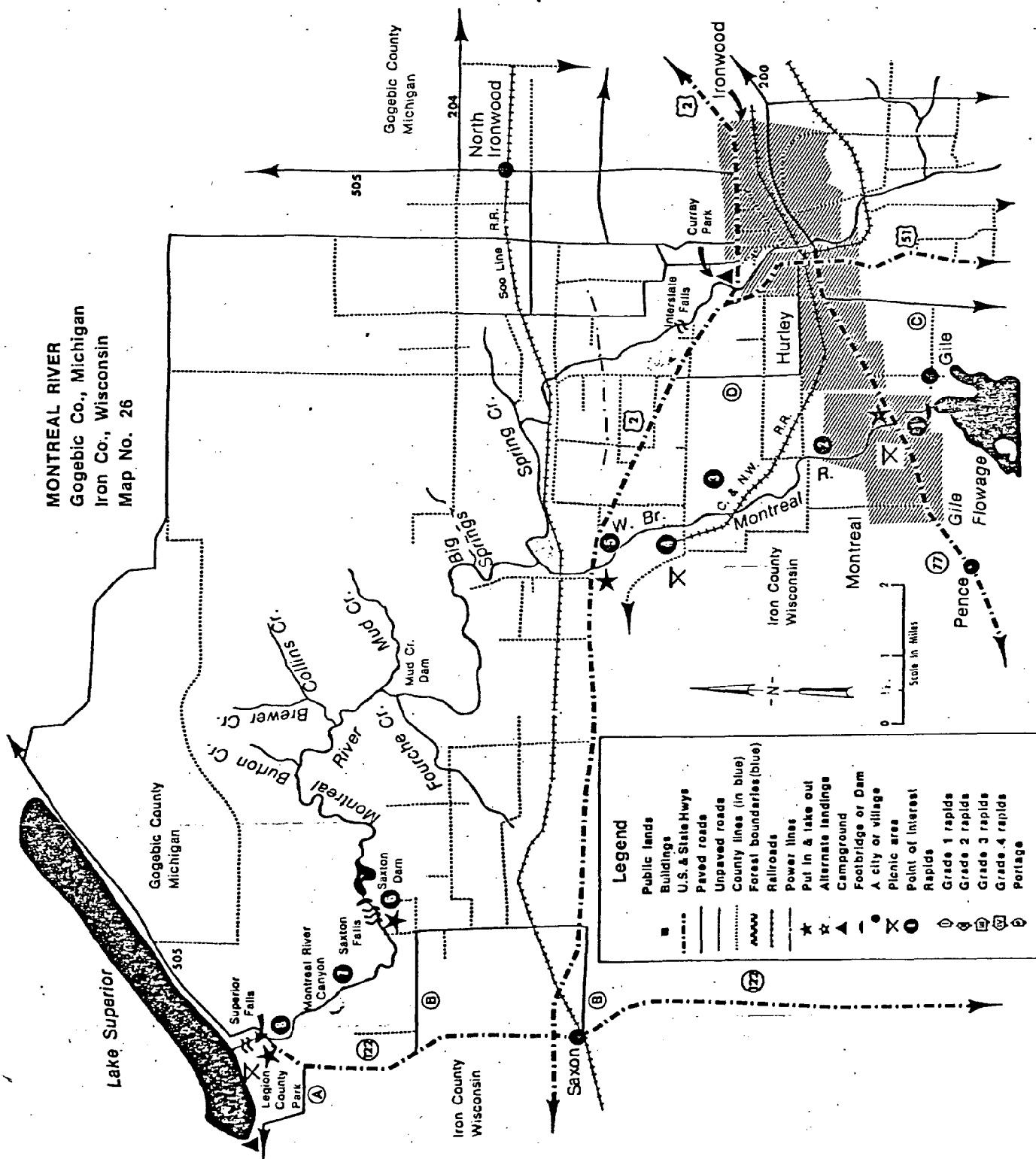
Section 2

(15.2 miles) Saxon Falls. We have not run the 10 miles between the end of Section 1 and the start of Section 2. The put-in for Section 2 is below this falls. The rapids in this section rate grade II and are tame in comparison to those in the previous section. To get to the put-in go north from Saxon on State Highway 122 and turn east onto County Highway B. Where B turns south, turn north onto a gravel road that goes to the Saxon Dam. There is a stairway that goes down to the river here, just below the powerhouse. Permission should be obtained before putting in here as this land is owned by the Lake Superior District Power Company. Saxon Falls is just upstream of the powerhouse.

(16.8 miles) Montreal River Canyon. This is a fantastically beautiful gorge with high sheer cliffs on both sides of the river. The upper part of the canyon consists mostly of dark volcanic basalt, while the lower canyon has walls of weathered sandstone conglomerate.

(8.8 miles) Wisconsin Highway 122 (Michigan Highway 505) bridge. This is the take-out for this section.

MONTREAL RIVER
 Gogebic Co., Michigan
 Iron Co., Wisconsin
 Map No. 26



APPENDIX C

Silvicultural and Forest Aesthetics Handbook - WDNR

NORTHERN HARDWOOD TYPE

Stand Characteristics:

Uneven-aged except in unusual cases. Very durable with life span of 100-200 years. Species range in tolerance from intermediate for yellow birch to high for hard maple.

Aesthetic Attractions:

All stands extremely attractive during fall color period. Sawtimber stands attractive all year.

Silvicultural System:

Selective cutting controlled by basal area using risk and vigor characteristics to determine individual tree selection.

Stand Description

Management Modifications

1. Sawtimber

1. Mark light improvement cuts every 7-10 years throughout entire diameter breadth height range. Stabilize stand at 90-110 sq. ft. Maintain large individual trees as long as vigor remains high. Favor maple (particularly red) for color. Discriminate against elm where stand density level permits. Remove-cull trees in first cutting when possible unless aesthetically valuable. Retain pine "sentinels" even if stumpage value is sacrificed.

2. Poletimer

2. Mark improvement cuts ever 7-10 years. Control stand at 90-110 sq.ft. Thin slightly heavier adjacent to road to develop full crowns. Maintain large individual trees as long as vigor remains high. Favor maple (particularly red), white birch and conifers. Discriminate against elm where stand density permits. Remove cull trees in first cutting when possible unless aesthetically valuable.

3. Reproduction

3. Allow stand to develop naturally unless opportunity exists for noncommercial sanitation thinning. Favor maple (particularly red) white birch and conifers. Discriminate against elm. Interplant with white spruce in understocked stands. Encourage natural fir groups if present.

Stand Treatment Methods in Aesthetic Zones

Whenever possible aesthetic management should be integrated into commercial logging operations. However, it is anticipated that due to the variety of conditions and the special attentions demanded in the treatments that separate small sale contracts or permits will be needed to accomplish the management objective. The development of small-scale jobbers who are interested in and properly equipped to handle aesthetic zone cuttings would be the ideal. Whichever method is used, certain principles of stand treatment should be followed.

The following stand treatment methods are intended to:

1. Maintain aesthetic zones in a healthy, forested, and aesthetically pleasing condition.
2. Reduce damage to residual trees.
3. Reduce visible evidence of logging.
4. Reduce soil erosion.

Logging Control

- A. All logging with the exception of pure conifer stands should be done when residual hardwoods are leafless to reduce felling damage and to eliminate persistent foliage in tops.
- B. All tops should be treated so that all slash is within 18 inches of the ground. This may require disposal effort by the sale contractor or by force account.
- C. No tops will be left in ditches, on shoulders or in streams or lakes.
- D. Landings for forest products should not be permitted in the aesthetic zone. No debarking equipment should be allowed to operate within sight of the travelled thoroughfare.
- E. Logging road entrances to public roads should be constructed in a manner that will not detract from scenic values. Entrances should be at an angle instead of perpendicular and curve so as to screen the road. Excessive bulldozing effort should not be permitted.
- F. All skid trails should be well-spaced and on the contour and lead back away from the aesthetic zone. Skidding to public roadsides should be discouraged.
- G. Skidding equipment must be of a type approved for use in aesthetic zones. Excessively large equipment which will cause damage should not be allowed. Skidding must be done in a careful manner to protect residual trees.

Sale Sign

- A. Personnel establishing timber sales in or adjacent to aesthetic zones must have a sensitivity for scenic values. Orientation and training must be given in techniques to be used to preserve and enhance these values.
- B. Distances specified in the prescriptions are intended to be guidelines. Zone boundaries should be established so as to blend with the environment, i.e., topography, stand conditions, sight distances, etc. Management should blend. Fully utilize available topographic maps, aerial photographs and soil surveys and combining these with local knowledge or field reconnaissance to

ascertain on-the-ground conditions.

- C. Whenever practical, use perennial streams as harvest-cutting boundaries with provision for a streamside management zone to protect stream bank integrity and water quality, and with skidding planned away from these streams and the adjacent streamside management zones.
- D. Cutting boundaries should utilize topographic terrain, ridges, roads and forest type changes where ownership patterns permit and should provide a harvest area size consistent with economical skidding, available logging equipment, silvicultural requirements and other management objectives.
- E. An appropriate silvicultural system and cutting design should be planned to optimize economic skidding distances, to minimize road densities and unnecessary road construction and for efficient establishment and management of subsequent forest crops.
- F. Plan cutting layouts to avoid leaving narrow unmanageable strips of timber susceptible to storm damage and windthrow. Strip clear cuttings should be curved to avoid "tunnel-like" appearances.
- G. Paint marks should face away from the road.
- H. Plastic ribbons and painted boundaries should be used discreetly.
- I. Patches of overstocked timber should be retained for variety and cultural interest where possible.
- J. Uniform spacing in plantations and thinnings should be modified to develop a natural stand appearance.

Noncommercial Cuttings

Treatments of a noncommercial nature should be made in a manner which will enhance aesthetic values. This means that slash, cut trees, brush, etc., should be within 18 inches of the ground. Stump heights should be low. Saplings should not be severed high above the ground. Salvage for firewood is encouraged where such removal will not have detrimental impact on scenic values.

Herbicide treatment should be avoided in aesthetic zones. Stump treatment to prevent sprouting may be desirable at times. However, mechanical treatment methods are recommended.

Pruning

All pruning should be done according to standard acceptable practices. However, pruning to variable heights should be considered to prevent an artificial appearance to the stand.

Planting

Tree and shrub plantings can be used to screen unsightly dumps, borrow pits, gravel pits, power and gas line R.O.W.s, etc. Underplantings and interplantings can often be used to develop long range solutions to aesthetic problems. Plantings should be adapted to the site and performed according to good forestry practices.

Large block type plantings of a single species that create a monotype culture within an area shall be discouraged. Plantations shall be established to achieve a more aesthetically pleasing appearance and to provide for added diversity of type. Planting will be accomplished by varying the direction

of the rows or contouring to create a more natural appearance, planting on the contour, using shallow furrows or eliminating furrows where practical. In planting adjacent to a major roadway, the first rows should be parallel to the roadway to meet aesthetic concerns and provide game cover.

APPENDIX D

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